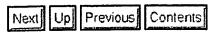EXHIBIT A

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C Glossary

Address family:
The address format used to interpret addresses specified in socket operations. Examples are the internet address family/domain (AF_INET) and the UNIX address family/domain (AF_UNIX).

Advanced Research Projects Agency:
A U.S. government research agency that was instrumental in developing and using the original ARPA Services on the ARPANET. Later it founded global Internet.

Alias:
A term used to refer to alternate names for networks, hosts and protocols. This is also an internetwork mailing term that refers an alternate name for a recipient or list of recipients (a mailing list).

ANSI:
American National Standards Institute. A group that defines U.S. standards for information processing industry including ASCII, FDDI, SGML, programming languages, SQL etc.

API:
Application Programming Interface

ARPA:
See *Advanced Research Projects Agency*.

ARPA/Berkeley Services:
The set of services originally developed for use on the ARPANET (i.e., `telnet(1)`) or distributed with the Berkeley Software Distribution of UNIX, version 4.2 (i.e., `rlogin(1)`).

ARPANET:
The Advanced Research Projects Agency Network, founded by ARPA. It served a long time as the basis for networking research and as a central backbone during development of Internet.

ASCII:
American Standard Code for Information Interchange.

Association:
An Interprocess Communication connection (e.g., a socket) is defined by an association. An association contains the (protocol, local address, local port, remote address, remote port)-tuple. Associations must be unique; duplicate associations on the same system may not exist.

Berkeley Software Distribution UNIX:
A version of UNIX software released by the University of California at Berkeley, or one of the commercial versions derived from it. BSD UNIX was the first UNIX which first included TCP/IP protocols.

Binding:
Establishing the address of a socket which allows other sockets to connect to it or to send data to it.

BSD UNIX:
See *Berkeley Software Distribution UNIX*.

Channel:
A communication path created by establishing a connection between sockets.

Client:
A process that is requesting some service from another process.

Client host:
The host on which a client process is running.

client/server:
A model of interaction in distributed systems in which a program on one site sends a request to a program (at probably another site) and waits for a response. The requesting program is called *client*, the program that responds to that request *server*.

Connection:
An abstraction that is provided by protocol software.

Daemon:
A software process that runs continuously and provides services on request. In the UNIX *client/server* model the *server* is normally a daemon.

DARPA:
See *Defense Advanced Research Projects Agency*.

Datagram sockets:
A socket that maintains record boundaries and treats data as individual messages rather than a stream of bytes. Messages may be sent to and received from many other datagram sockets. Datagram sockets do not support the concept of a connection. Messages could be lost or duplicated and may not arrive in the same sequence sent. Datagram sockets of the Internet domain use the User Datagram Protocol.

Defense Advanced Research Projects Agency:
The military arm of the Advanced Research Projects Agency. Former name of *ARPA*.

Domain:
A set of allowable names or values.

File Transfer Protocol:
The TCP/IP high-level file transfer protocol for transferring files from one machine to another. The `ftp` command uses the FTP protocol.

Free Software Foundation:
The Free Software Foundation is dedicated to eliminating restrictions on people's right to use, copy, modify, and redistribute computer programs. They do this by promoting the development and use of free software. Specifically, they are putting together a complete, integrated software system named ``GNU'' that will be upwardly compatible with UNIX. Most parts of this system are already being used and distributed.

FSF:
See *Free Software Foundation*.

FTP:

See *File Transfer Protocol*.

Gateway:
Former: a node that connects two or more networks together and routes packets between those networks. Now: application program that interconnects two or more services (e.g. e-mail gateway between two different net types).

GNU:
GNU, which stands for *Gnu's Not Unix*, is the name for the complete UNIX-compatible software system. See also *Free Software Foundation*.

GOSIP:
See *Government OSI Profile*.

Government OSI Profile:
Governments in many countries have adopted selected subsets of OSI, known as GOSIP, and have made them a requirement for interconnectivity and procurement activities.

Host:
A node that has primary functions other than switching data for the network (normally end-user computer system).

ICMP:
Internet Control Message Protocol, part of the Internet Protocol. The ICMP is used from gateways to hosts and between hosts to report errors and make routing suggestions.

IEEE:
Institute of Electrical and Electronics Engineers, Inc.

International Standards Organization:
International body that drafts, discusses and specifies standards for network protocols. Best known for its 7-layer reference model that describes the conceptual organisation of protocol. Although always used as reference model, it is seldom used in the commercial market.

internet:
Connection of two ore more networks.

Internet:
The collection of networks that connects a large number of networks. Uses the TCP/IP protocol to form a single virtual network. Grows with a phenomenal rate.

Internet address:
A four-byte quantity that is distinct from a link-level address and is the network address of a computer node. This address identifies both which network is on the Internet and which host is on the network.

Internet Protocol:
The TCP/IP standard protocol that defines the IP datagram as the basic unit of information passed across an internet. See [RFC 791] for exact specification.

Internetwork:
A term used to mean among different physical networks.

Interprocess Communication:

A facility that allows a process to communicate with another process on the same host or on a remote host.

IP:
See *Internet Protocol*.

IPng:
Internet Protocol - the Next Generation, a term applied to all activities related to the specification of the next version of IPv6. The current version is IPv4.

IPC:
See *Interprocess Communication*.

ISO:
See *International Standards Organization*.

Node:
A computer system that is attached to or is part of a computer network.

Open Software Foundation:
Consortium of computer companies that are attempting to define a common operating environment for workstations. OSF has the following goals: supply portable, scaleable, and interoperable open systems software technology. Important standards from OSF: OSF/1, DCE, MOTIF.

OSF:
See *Open Software Foundation*.

OSF DCE:
See *OSF Distributed Computing Environment*.

OSF Distributed Computing Environment:
OSF's Distributed Computing Environment provides services and tools that support the creation, use, and maintenance of distributed applications in a heterogeneous computing environment.

Packet:
A data unit that is transmitted between processes. Sometimes also called frame.

POSIX:
Portable Operating System Interface for uniX, a family of standards developed by the IEEE.

POSIX.1:
IEEE Std. 1003.1-1990 Standard for Information Technology Portable Operating System Interface (POSIX) - Part 1: System Application Programming Interface (API)

Protocol:
A set of conventions for transferring information between computers on a network (e.g., UDP or TCP).

Remote host:
A computer that is accessible through the network or via a gateway.

Remote Procedure Call:
A technology in which a program invokes services across a network by using modified procedure calls, normally generated with a stub generator.

Request For Comment:
RFCs are documents that define the protocols used in the IP Internet. Some are only suggestions, some are even jokes, and others are published standards. Several sites in the Internet store RFCs and make them available for anonymous ftp.

RFC:
See *Request For Comment*.

RPC:
See *Remote Procedure Call*.

sequence number:
A unique number for every packet on a particular connection maintained by a reliable transport layer service. The sequence number allows the transport layer to see if any packets were lost or delivered out of sequence by the underlying network and data layers.

Server:
A process or host that performs operations that local or remote client hosts request.

Service:
A facility that uses Interprocess Communication to perform remote functions for a user (e.g., rlogin(1) or telnet(1)).

Socket:
Addressable entities that are at either end of an Interprocess Communication connection. A socket is identified by a socket descriptor. A program can write data to and read data from a socket, just as it writes and reads data to and from files.

Socket address:
The internet address, port address and address family of a socket. The port and internet address combination allows the network to locate a socket.

Stream socket:
A socket that, when connected to another stream socket, passes data as a byte stream (with no record boundaries). Data is guaranteed to arrive in the sequence sent.

SVID:
See *System V Interface Description*.

System V Interface Description:
A formal document that exactly specifies which facilities a system has to have if it claims to be System V compatible.

TCP:
See *Transmission Control Protocol*.

TCP/IP:
See *TCP/IP Internet Protocol Suite*.

TCP/IP Internet Protocol Suite:
A collection of all TCP/IP protocols, often abbreviated with just TCP/IP, because they are the two fundamental ones.

TLI:
See *Transport Layer Interface*.

Transmission Control Protocol:
A connection-oriented protocol that guarantees that messages are delivered in the order in which they were sent and that all messages are delivered. If a TCP connection cannot deliver a message it closes the connection and informs the entity that created it. This protocol is layered on top of IP.

Transport Layer Interface:
A (not only) network interface defined for System V UNIX.

UDP:
See *User Datagram Protocol*.

Uniform Resource Locator:
A string that gives all information to access a piece of information: it contains the protocol type (e.g. ftp or http), and an identification of specific information (e.g. domain or path names).

UNIX:
Operating System family. Today there are two major directions, BSD and System V, upon most UNIX flavours are based.UNIX is a trademark of UNIX System Laboratories, Inc.

UNIX Domain Address:
A character string containing the UNIX pathname to a UNIX Domain socket.

UNIX Domain Protocol:
A protocol providing fast communication between processes executing on the same host and using the AF_UNIX socket address family.

URL:
See *Uniform Resource Locator*.

User Datagram Protocol:
A connectionless protocol built on top of IP. It does not provide any guarantees on the ordering or delivery of messages. The important difference between UDP and IP is that UDP includes a protocol port number, allowing the sender to distinguish among multiple application programs on a given remote machine.

Virtual Terminal Protocol:
A protocol that provides terminal access to interactive services on remote hosts (e.g., telnet(1)).

World Wide Web:
A very large scale multi-medial information service that allows users to browse information using a WWW-browser like Netscape or Mosaic.

WWW:
See *World Wide Web*.

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